

Notice of Allowability

Application No.

09/931,105

Examiner

Lisa Hashem

Applicant(s)

YOSHIDA ET AL.

Art Unit

2645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1-10-2005.
2. ☒ The allowed claim(s) is/are 1-15.
3. ☒ The drawings filed on 8-17-2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. The restriction of claims 1-10, 11-12, and 13-15 filed on 12-16-2004 is withdrawn.
2. Claims 1-15 are pending in this application.
3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
4. Authorization for this examiner's amendment was given in a telephone interview with Eckhard Kuesters (Reg. No 28,870) on June 23, 2005.
5. The application has been amended as follows:

Claim 12 on page 53, line 19 recites:

ratio to output a third local signal.

This is amended to recite:

ratio to output a third local signal;

The '.' is changed to a ';'.

Allowable Subject Matter

6. The following is an examiner's statement of reasons for allowance: upon close review of the claims, the prior art, and applicant's remarks it appears that the allowance of claims 1-12 are appropriate.

Referring to the claimed invention, U.S. Patent No. 5,220,684 by Suizu discloses a channel selecting circuit comprising: a first synthesizer or tuner (Fig. 1: 12a, 12b) which outputs a signal of which frequency is within one of a plurality of frequency bands; a second synthesizer

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or reference oscillator (Fig. 1, 263) which outputs a fixed frequency signal; a mixer (Fig. 1, 12c) which mixes the signal output from the first synthesizer with a signal output from an amplifier; a first divider (Fig. 1, 262) which divides the frequency signal output from the first synthesizer by a first division ratio; a second divider (Fig. 1, 264) which divides a signal output from the second synthesizer by a second division ratio; a third divider (Fig. 1, 265) which divides the frequency signal output from the first divider by a third division ratio; and a fourth divider (Fig. 1, 266) which divides the signal output from the second divider by a fourth division ratio (col. 3, line 43 – col. 4, line 55).

U.S. Patent No. 5,497,128 by Sasaki, discloses a frequency synthesizer comprising: a first synthesizer (Fig. 3, 31) which outputs signal of which frequency is within one of a plurality of frequency bands; a second synthesizer (Fig. 3, 32) which outputs signal of which frequency is within one of a plurality of frequency bands; a first divider (Fig. 3, 33) which divides a signal output from the first synthesizer by a first division ratio; a first multiplier (Fig. 3, 35) which multiplies the frequency of the signal output from the first divider; a second divider (Fig. 3, 34) which divides a signal output from the second synthesizer by a second division ratio; a second multiplier (Fig. 3, 36) which multiplies the frequency of the signal output from the second divider; and a combining circuit (Fig. 3, 37) which outputs a signal output from the first and second multipliers (col. 5, line 41 – col. 8, line 21).

U.S. Patent No. 6,574,462 by Strange discloses a local oscillator circuit that may be used in a dual frequency radio frequency receiver (e.g. GSM or DCS) (multi-band apparatus) comprising: a first synthesizer (Fig. 4, 32) which outputs signal of which frequency is within one of a plurality of frequency bands; a first mixer (Fig. 3, 36) which multiplies the frequency of the

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signal output from the first synthesizer; a second mixer (Fig. 4, 38) which multiplies the frequency of the signal output from the first synthesizer; a first divider (Fig. 4, 46) which divides a signal output from the first and second mixer by a first division ratio; a second divider (Fig. 4, 46) which divides a signal output from the first divider by a second division ratio; and a switch (Fig. 3, 37) which outputs either a signal output in DCS mode or GSM mode (col. 3, line 47 – col. 4, line 59).

None of the prior art disclose a frequency synthesizer comprising a small number of unit synthesizers and has a small circuit scale and a multi-band radio apparatus comprising a frequency synthesizer, as shown in Figures 1-11 and as claimed in Claims 1, 7, 9, 11, 12, 13, 14, and 15.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8. Any response to this action should be mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306 (for formal communications intended for entry)

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Or call:

(571) 272-2600 (for customer service assistance)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (571) 272-7542. The examiner can normally be reached on M-F 8:30-5:30.

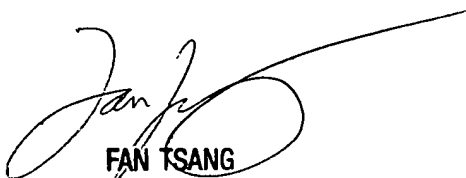
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LH

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June 23, 2005


FAN TSANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600